History and pathology of crucifixion

Crucifixion is a tough topic and from a religious standpoint is not associated with this time of the year. However, its practice precedes the Christian era by centuries. Francois Retief and his colleague L Cilliers, from the Department of English and Classical Culture at the University of Bloemfontein, take us on a scholarly and fascinating journey through the history of crucifixion, its process, and causes of death (p. 938).

The three most brutal forms of execution known to antiquity were judged to be crucifixion, burning and decapitation, in that order. Crucifixion originated in Mesopotamia and Persia, but was perfected by the Romans, who saw it as a most shameful mode of death. The history of the procedure over almost 1 000 years until Constantine I abolished it after AD 320 is reviewed.

During the 1st century Palestine saw the crucifixion of large numbers of rebels against Rome, mostly Jews. Christ was crucified on the pretext that he instigated rebellion against Rome, on a par with Zealots and other political activists. Although many victims condemned to crucifixion were called robbers, the majority were probably politically motivated individuals rather than true criminals. The Romans were primarily interested in subjugating political dissent, not ordinary criminality.

Crucifixion was originally performed on trees or simple pole structures rather than a formal cross. Later a variety of crosses came into regular use, e.g. an X-shaped cross, but in the majority of cases the well-known Latin cross were used.

In Roman law a person condemned to death (including crucifixion) had to be scourged beforehand. This was a particularly brutal procedure, performed with wooden staves or a short whip (*flagellum*). Preliminaries to crucifixion such as scourging or maiming caused the condemned to arrive at the cross severely traumatised.

The main cause of death in the majority of victims would have been asphyxiation from severely hampered respiration with secondary cardiovascular collapse. Death by crucifixion was indeed excruciating (*excruciates*, 'out of the cross') in every sense of the word.

Death by air

An Intravenous Fluid Investigative task Force was appointed by the Minister of Health to investigate unidentified deaths in babies in some hospitals in South Africa. The Task Force did consider air embolism as a cause, but could provide no evidence to substantiate the contention.

Smith and Els (p. 922) present four cases in which causality is demonstrated between the patients' sudden clinical deterioration and subsequent death, intracardiac air and the citing of a peripheral venous line or an infusion pump that alarmed. They speculate that the accidental infusion of air from infusion sets may be at the root of the so far inexplicable acute clinical deterioration that some infants experience after a drip has been inserted.

A devastating complication of neonatal intensive care is that of iatrogenic systemic air embolism, usually described in association with mechanical ventilation. Several mechanisms have been proposed to explain the presence of air in the heart, brain and/or systemic vessels. The most popular explanation is that of pulmonary venous air embolism as a consequence of ventilator-induced barotrauma or the development of a bronchovenous fistula in the face of high intrabronchial pressures. Neonates are particularly vulnerable to developing arterialisation of venous air because the foramen ovale may remain patent for an extended period after birth. Much of the brain dysfunction resulting from cerebral arterial air embolism may be due to the effects of air on vascular endothelial cells and not the effects of bubble entrapment.

The authors state that the only way to treat air embolism is to prevent its occurrence.

Traditional Healers Bill

African traditional medicine is very popular, more than 80% of Africans continuing to use it. Dr Ebrahim Samba, Regional Director for the World Health Organisation for Africa, has called on African governments to formally recognise traditional medicine. Dr Samba called for:

- investment in research and development to validate claims on the safety, efficacy and quality of traditional medicines
- inventories of effective traditional medicine practices
- national formularies on traditional medicines with evidence of safety, efficacy and quality
- large-scale cultivation and conservation of medicinal plants
- development of local production of traditional medicines, and protection of intellectual property rights. Quite a tall order!

In South Africa the 'legal bones were thrown in the form of a Government Gazette of October 10 this year that signalled health minister Manto Tshabalala-Msimang's intent to introduce the Traditional Health Practitioners Bill before the end of the year'. Chris Bateman (p. 882) gathers and records the opinions of a range of interested parties in his usual entertaining style. Predictably, views vary!

Local plants heal

Peter Taylor, who is a Reader in Pharmaceutical Microbiology, is researching new ways to treat bacterial infections, particularly those caused by multiple drug-resistant pathogens. He reports (p. 904) on the investigation of an herbal concoction with a long history of use in South African native medicine, namely the roots of two species of indigenous geraniums. The history of the use of this preparation as 'Stevens' Consumption Cure' provides an insight into the problems that may still arise from the increasing interest in indigenous plants with purported healing properties.

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